Online-Only Abstract

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Transmission of *Staphylococcus aureus* between mothers and infants in an African setting

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Abstract

Staphylococcus aureus colonization is a risk factor for invasive disease. There is a need to understand *S. aureus* colonization in infancy as the burden of *S. aureus* infections in infants is high. We aimed to investigate the transmission of *S. aureus* between mothers and their newborns during the first year after delivery in an African setting. In a longitudinal cohort study, colonization of Gabonese mother–infant pairs was assessed at delivery and after 1, 9 and 12 months. Swabs were taken from mothers (nares, mammillae) and infants (nares and throat). Isolates were characterized and risk factors for colonization were assessed using a standardized questionnaire. We recruited 311 mothers and 318 infants including seven sets of twins. Maternal and infant colonization rates declined synchronously following a peak after 1 month at 40% (mothers) and 42% (infants). Maternal colonization was a risk factor for *S. aureus* carriage in infants. Based on *spa* typing, direct mother-to-infant transmission was evident in 5.6%. Of all methicillin-resistant isolates (n = 9), 44.4% were related to the USA300 clone; 56.7% (n = 261) of all *S. aureus* carried Panton–Valentine leukocidin encoding genes. Direct mother-to-infant transmission was rare and cannot explain the increase of carriage in infants within the first month. A transmission from external sources is likely and challenges the *S. aureus* infection control in newborns and infants in an African setting. The detection of USA300-related MRSA fuels the concern about the spread of this clone in Central Africa.